

REMARKS

Claims 1-26 are now pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejection(s) in view of the remarks contained herein.

CLAIM OBJECTIONS

Claims 9-13 are objected to because of informalities. The claim after claim 8 has been changed to be designated the number 9 and claims 9–13 have been renumbered accordingly.

REJECTION UNDER 35 U.S.C. § 102

Claims 1, 4-6, 9 (formerly the claim after claim 8), 10 (formerly claim 9), 13 (formerly claim 12), 14 (formerly claim 13), 17-21 and 24-26 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Kataoka et al (U.S. Patent No. 6,834,632).

Claims 1, 4-6, 9 (formerly the claim after claim 8), 10 (formerly claim 9), 12 (formerly claim 11), 14 (formerly claim 13), 17, 18-21 and 26 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Tatara et al (U.S. Patent Application No. 2003/0217877).

Applicant's claims 1, 9 (formerly the claim after claim 8) and 17 teach "a hybrid electric vehicle with a displacement on demand internal combustion engine." Applicant's claims 1 and 9 (formerly the claim after claim 8) have been amended to include in part, "a DOD ICE." Neither Kataoka nor Tatara show, teach, or suggest a DOD ICE that operates in DOD mode transitions. Therefore, the rejections are respectfully traversed.

Kataoka teaches a control for a hybrid vehicle with an internal combustion engine(2), an electric machine (3) and a battery (5) (Column 5 lines 18-29). The engine is described as a four cycle internal combustion engine (Column 5 lines 49-60) that operates in a normal running mode (Column 11 lines 24-35), transitions from a normal running mode to a stop control mode (Column 11 lines 49-60) and transitions from a stop control mode to a start control mode (Column 16 lines 9-13). The engine (2) is not a DOD engine.

DOD engines are known by one skilled in the art to deactivate cylinders under specific low load operating conditions. For example, an eight cylinder engine can be operated using four cylinders to improve fuel economy by reducing pumping losses. DOD engines can be quite complex. DOD engines continue to run while in a deactivated mode but, with a fewer number of cylinders firing. Operation using all of the engine cylinders is referred to as an activated mode. Operation using less than all of the cylinders is referred to as a deactivated mode.

In contrast, Katoaka's engine (2) when "deactivated" is completely stopped thereby stopping the vehicle (Column 11 lines 52-53). The engine does not continue to run as does a DOD engine. The engine acts as a conventional internal combustion engine capable of starting and stopping during the drive cycle. Therefore, the engine (2) of Kataoka is not a DOD engine. Further, Kataoka's engine does not operate in a "deactivated mode" as does Applicant's invention.

Tatara also does not teach a DOD internal combustion engine. Tatara teaches an engine capable of operating in two cruise modes (1) a motor cruise mode (in which the vehicle is driven by the motor-generator) and (2) an engine cruise mode (in which

the vehicle is driven by the engine) (Paragraph 57). Tatara teaches providing an all-cylinder deactivation command to the engine to stop fuel injection and ignition to all cylinders (Paragraph 54). The all-cylinder deactivation command allows the engine to transition from the engine cruise mode to the motor cruise mode. Tatara does not teach a DOD engine capable of operating with less than all cylinders active. Tatara does not teach transitioning from an activated mode to a deactivated mode where the engine is still operative in a deactivated mode. Therefore, Tatara does not teach a DOD engine capable of operating in a deactivated mode similar to Applicant's invention.

Accordingly, Kataoka and Tatara fail to teach every element of claims 1, 4-6, 9 (formerly the claim after claim 8), 10 (formerly claim 9), 13 (formerly claim 12), 14 (formerly claim 13), 17-21 and 24-26. Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejection.

REJECTION UNDER 35 U.S.C. § 103

Claims 24 and 25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tatara (U.S. Pat. App. No. 2003/0217877) in view of Kataoka (U.S. Pat. No. 6,834,632). This rejection is respectfully traversed.

Claims 24 and 25 are dependent on claim 17 and for the reasons set forth above, distinguish over the cited art. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection.

ALLOWABLE SUBJECT MATTER

Applicant would like to thank the Examiner for favorable consideration of claims 2, 3, 7, 8, 10, 11, 15, 16, 22, and 23 which were indicated as allowable if rewritten in independent form. Applicant reserves the right to rewrite any or all of claims 2, 3, 7, 8, 10, 11, 15, 16, 22, and 23 at a later date as needed.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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